

smaller, but appear to be mature. The peculiar axial striations on the lower whorls are not quite so well-developed as in typical *yrekaensis*.

(To be continued)

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## A BIOCHEMICAL METHOD FOR INTERNALLY CLEANING SMALL MOLLUSCAN SHELLS

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This communication is offered for the use of any interested persons who may be unfamiliar with the suggestion which follows. Conchologists and other shell fanciers are asked to bear with the writer if he is presenting to them a method with which they may have been long acquainted, for removing the natural occupant of a shell by enlisting the aid of a marine carnivore. The use of ants, fish, and other animals for cleaning skeletons preparatory to mounting has long been known.

In the past, I have effected the thorough internal cleaning of the shells of some of the smaller marine gastropods and lamelli-branches, for the aesthetic pleasure of others who wanted the finished shells, and in connection with my own studies of the digestive enzymes of marine invertebrates, by merely dropping the specimens upon the tentacles or oral disc of a sea anemone. Care must be taken to select hungry anemones, and to avoid offering them an excess, to ensure complete digestion of the meat. Crabs and other carnivores which might crush or otherwise damage the expelled shells or even wrest the food from the anemone before the latter can swallow it are excluded from the aquarium. The anemone seizes the mollusk and swallows it, discharging the cleaned, empty shell next day or perhaps earlier. Doubtless most species of anemone would perform the task satisfactorily. The species that I have in laboratory aquaria and have used is the common, large *Cribrina xanthogrammica*, which is so numerous and easily obtainable on the Pacific Coast.

Shells of rather delicate structure and color can evidently be cleaned in the above fashion. I have prepared, for example, such

shells as those of *Donax* and *Olivella* species by the anemone method; the discharged shells, after being rinsed off to remove traces of slime and gastrovascular fluid from inner and outer surfaces, still retained their natural beauty and lustrous glaze, were entirely divested of meat and therefore devoid of the usual residual and disagreeable odor. The valves of the lamellibranch remained fastened together by the undamaged dorsal hinge.

A fact which is particular scientific interest is that the complete digestion of the proteins of the mollusks' flesh took place in the presence of such a great excess of calcium carbonate which composes a large part of the shells, without visibly affecting the surfaces.

Such observations would lead one to conclude that the powerful extracellular protease or proteases within the gastrovascular cavity of this coelenterate are non-peptic in character, acting as they must in a slightly alkaline or at best, only very faintly acidic medium.

### APLEXA HYPNORUM PILSBRYI N. SUBSP.

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Shell like *A. hypnorum*, but characterized by a long, strongly attenuate spire; the spire nearly one-half as long as the body whorl.

Length—	Greatest diameter—	Length of aperture—
10.8 mm.	4 mm.	5.7 mm. Type
10.3 mm.	3.8 mm.	5.5 mm. Paratype
9.7 mm.	3.8 mm.	5.8 mm. Paratype
10.8 mm.	4.2 mm.	Paratype

*Type locality:* Pond near White Rocks River, at Paradise Creek, White Rocks Canyon, Rocks, Uinta County, Utah, Twp. 2 south, Range 18 east, Salt Lake Meridan. *Collector:* Mr. E. R. Eller, Carnegie Museum Utah Expedition, 1933. *Type:* Carnegie Museum, Section of Recent Invertebrates, No. 62.26773. *Paratype:* Academy of Natural Sciences, Philadelphia, No. 164005.

I designate this subspecies *Aplexa hypnorum pilsbryi* in honor of Dr. H. A. Pilsbry, knowing, however, that this can in no manner compensate him for the generous expenditure of his aid, wisdom, and encouragement.